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Editorial

Cities, Long-Distance Travel, and Climate Impacts

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Abstract
This thematic issue focuses on important but understudied connections between cities and climate impacts of long-distance travel. While urbanization and urban density have climate change mitigation potential in short-distance travel (e.g., by reducing car use and supporting public transportation, walking, and cycling), they have been associated with a higher level of emissions from flights. This highlights the role that city-regions could potentially play in reducing climate impacts of aviation. At the same time, the development of airports and flight connections has been an important driver of economic growth at regional scale and a factor contributing to global competitiveness of city-regions. This thematic issue includes seven interesting articles focusing on different aspects of the theme, all of which are briefly presented in this editorial. We also lay down some suggestions for future research directions based on the findings presented in this thematic issue.

Keywords
aviation; cities; climate impacts; long-distance travel; urban living

Issue
This editorial is part of the issue "Cities, Long-Distance Travel, and Climate Impacts" edited by Jukka Heinonen (University of Iceland, Iceland) and Michał Czepkiewicz (University of Iceland, Iceland / Adam Mickiewicz University in Poznań, Poland).

1. Long-Distance Travel, Climate, and Urban Living

Reducing transport-related greenhouse gas (GHG) emissions to mitigate climate change has been strongly on the agenda since the climate change threat was identified. However, transport remains one of the main emissions sectors and one where the emissions have not declined but rather been on a continuous rise (Intergovernmental Panel on Climate Change, 2018). Moreover, while aviation has been considered of much less importance for climate change mitigation than ground transport, it had been growing steeply until the Covid-19 stoppage (Gössling & Humpe, 2020). It will also likely return to a previous pathway during the recovery. And while the science is still developing, it is already broadly accepted that non-CO_2, particularly the short-lived climate forcers, significantly enlarge the warming impact of aviation, by a multiplier of three according to a recent state-of-the-art overview (Lee et al., 2020).

Tourism and tourism-related emissions have grown rapidly in the 2000s and are projected to continue to grow proportionately quickly (Lenzen et al., 2018). The most affluent, many of whom reside in urban areas, drive this development (Wiedmann, Lenzen, Keyßer, & Steinberger, 2020). Flights are among the most income-elastic and unevenly distributed activities (Oswald, Owen, & Steinberger, 2020). Urban elites lead increasingly globalized lifestyles with distributed social networks and influence the lifestyles of those who aspire to the affluent classes (Czepkiewicz, Heinonen, & Ottelin, 2018). Urban lifestyles often go along with interest in the world's diversity, which fuels many travel motivations (Czepkiewicz, Heinonen, Næss, & Stefansdóttir, 2020). Interestingly, while many of the international urban centers are the strongholds of the green movement, recent studies reveal that pro-environmental attitudes and climate change concerns do not necessarily converge to low trip frequencies among green urbanites

(Árnadóttir, Czepkiewicz, & Heinonen, 2021; Bruderer Enzler, 2017).

In affluent and well-connected urban locations, flights can dominate all transport-related GHG emissions, even in locations with a strong role of the car in local mobility (Czepkiewicz, Árnadóttir, & Heinonen, 2019). In these locations, flying is also quickly becoming normalized, losing its luxury status. It should, therefore, receive more attention in climate change mitigation considerations in global cities. Moreover, it is not just aviation but also other aspects of long-distance travel that connect to lifestyles and the urban structure. Second-home possession, including summer cottages, is more common in more urbanized areas (Heinonen, Jalas, Juntunen, Ala-Mantila, & Junnila, 2013), and visiting them is a significant source of emissions in the Nordics (Næss, Xue, Stefansdottir, Steffansen, & Richardson, 2019).

2. Unraveling the Role of Urban Form, Lifestyles, and Governance

This thematic issue focuses on the important but understudied topic of the connections between cities, urban living, and climate impacts of long-distance travel. Whereas literature showing how urbanization and urban density have a climate change mitigation potential in short-distance travel (e.g., reducing car use and supporting public transportation, walking, and cycling) is extensive (Ewing & Cervero, 2010), the research is only in its infancy when it comes to long-distance travel and urbanity (Czepkiewicz, Heinonen, et al., 2018). Yet, already multiple studies to date have shown an intriguing spatial trend, in which participation in and frequency of long-distance travel (particularly international flights) and associated emissions are higher in large cities, urban cores, and densely built neighborhoods (Czepkiewicz et al., 2019; Czepkiewicz, Ottelin, et al., 2018; Holden & Linnerud, 2011; Næss, 2006; Reichert, Holz-Rau, & Scheiner, 2016).

Such a correlation can be interpreted as a challenge to urban densification policies (Holden & Linnerud, 2011; Holden & Norland, 2005). Implications of such a claim for urban planning are significant, and thus it requires a closer look. In particular, are there any causal influences of the built environment on long-distance travel? If yes, how robust are they, and in what circumstances do they occur? Are there any effects through which urban planning policies can "rebound" or "backfire," as suggested in studies by Ottelin, Heinonen, and Junnila (2014, 2017), where households spending less on cars spend more on flights? Is densification worsening living conditions to the point of making people want to escape urban environments, as suggested by the *compensation* hypothesis (Czepkiewicz et al., 2020; Næss, 2006)? Or, conversely, is the correlation due to other geographical trends, such as grouping of people with certain attitudes, lifestyles, or socio-economic status in urban centers?

Regardless of the reasons, the high mobility of urban residents raises the question of the role of urban governance in curbing travel-related emissions. Sustainable urban mobility has long been regarded as a key sphere of policy intervention by local governments who want to reduce GHG emissions while improving living conditions for the residents. Policy-making in long-distance travel and aviation has been mostly delegated to national and international levels. Local governments usually consider improving long-distance connectivity as an important driver of city-regions' economic growth and global competitiveness, with urban planning often leaving ample space for airport expansions. Could city-regions take a stronger role in reducing the climate impacts of long-distance travel of their residents, as explored by Elofsson, Smedby, Larsson, and Nässén (2018)?

3. A Collection of Seven Articles Connecting Urban Living and Long-Distance Travel

This thematic issue comprises seven articles focusing on different aspects of urban living and long-distance travel nexus. Two articles accentuate the pattern in which residents of large capital cities fly more than do others: Greater London in the UK (Mattioli, Morton, & Scheiner, 2021) and Vienna in Austria (Falk & Hagsten, 2021). The study in Austria also points out other factors of high air mobility, including higher education and young age. Mattioli et al. (2021) provide further explanations, concluding that airport accessibility, migration background, and dispersion of social networks all contribute to this pattern. Results of these two studies also reiterate that flying and associated emissions are unevenly distributed (e.g., Gössling & Humpe, 2020): A large proportion of the populations does not fly at all, while a small minority of high-flyers generates much of the traffic and GHG emissions.

Raudsepp, Árnadóttir, Czepkiewicz, and Heinonen (2021) provide further nuance to relationships between urbanity and long-distance leisure travel using qualitative data. They find multiple factors that might indeed "push" urbanites towards seeking relief from urban life in long-distance trips. They go beyond the typically narrow framing of the compensation hypothesis. Besides poor access to green areas, the hectic character of urban life and stressful commutes may motivate leisure trips, particularly those associated with seeking calmness in nature and the countryside. Car-free lifestyles did not seem to lead to increased spending on flights, even though they limit access to domestic leisure travel to some extent. Similarly, Mattioli et al. (2021) did not find evidence for rebound effects between car ownership and flights.

Pukhova, Moreno, Llorca, Huang, and Moeckel (2021) apply agent-based modeling to long-distance travel emissions in Germany to estimate and illustrate the potential of reducing GHG emissions via air travel demand reduction. Among the ways to achieve it are increases in ticket prices and restricting short-haul flights. The results suggest a relatively high potential of these

policies in reducing emissions, even though they are limited to domestic flights, which comprise a high proportion of flights but a relatively small proportion of emissions. Two other articles reflect on the role that global cities, such as Brussels in Belgium and Geneva in Switzerland, can have in reducing emissions from long-distance travel (Boussauw & Decroly, 2021; Sahakian, Nagel, Donzelot, Moynat, & Senn, 2021). How to reconcile Net-zero pledges made by cities with their strong dependence on international mobility and connectivity? Boussauw and Decroly (2021) highlight the role of allocating emissions caused by international travel to territorial units, such as urban regions and municipalities.

Sahakian et al. (2021) study the process of co-designing a city-wide change initiative aiming at reducing flights in Geneva. They highlight the value of going beyond an individualistic approach and understanding flying as a social practice embedded in socio-material arrangements that involve infrastructures, technologies, social norms, and shared meanings. Similarly, using a distinct methodology grounded in rhetoric, Wormbs and Wolrath Söderberg (2021) study a change process in Swedish residents who decided to quit or reduce flying. They highlight the role of knowledge about the climate impact of flying in motivating change, particularly when internalized through experience or emotional distress. Feelings of fear and guilt had important roles, while shame was rarely mentioned, contrary to certain popular claims. Despite their focus on individual narratives, Wormbs and Wolrath Söderberg (2021) succeed in bridging the chasm between "the individual" and "the social" by illustrating how decisions to reduce or quit flying are deeply embedded in social networks and connected to the notions of morality and climate justice.

4. Future Research Directions

The articles in this thematic issue further confirm the connection between urbanity and long-distance travel, particularly between living in well-connected urban centers and traveling abroad frequently. While early evidence about the reasons behind this connection and potential factors of change towards reducing air travel demand has been compiled, it is a research field with a lot left to study. Rebound effects and behavioral lock-ins are interesting issues with contradictory results to date. Future research should continue to unravel how interventions in built environments and the spatio-temporal organization of everyday life (e.g., work time reductions, telework) influence the long-distance travel of urban dwellers. More research is needed on how travel-related social norms and status aspirations form and circulate in urban social networks, contributing to both highly mobile urban lifestyles and the emergence of social movements that contest them. Particularly understudied is the importance of long-distance travel for well-being and lifestyles organized with sufficiency in mind, i.e., ones with simultaneously low climate impacts and good living standards. Finally, more research is needed on how local governments can mitigate emissions from long-distance travel. Can they accelerate processes of collective and individual change? Should they take responsibility for emissions from the travel of their residents and visitors? Can we imagine models of local and regional development that do not depend on long-distance connectivity?

Conflict of Interests

The authors declare no conflict of interests.

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